

A new genus and species from southwestern China in the *Frankliniella* genus-group (Thysanoptera: Thripidae)

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Abstract

A new genus and species, *Yaobinethrips yangtzei*, are described from Southwestern China sharing many character states with the Austro-Oriental genus *Paraballothrips* within the *Frankliniella* genus-group. Within this group the new species is distinguished by the presence of tergal craspeda, a pair of uniquely bulbous modified setae on the fore tibiae, enlarged fore femora with a basal tooth, and paired small pore plates on sternum VI of females.

Key words: *Yaobinethrips yangtzei* new genus, new species, *Frankliniella*, China

Introduction

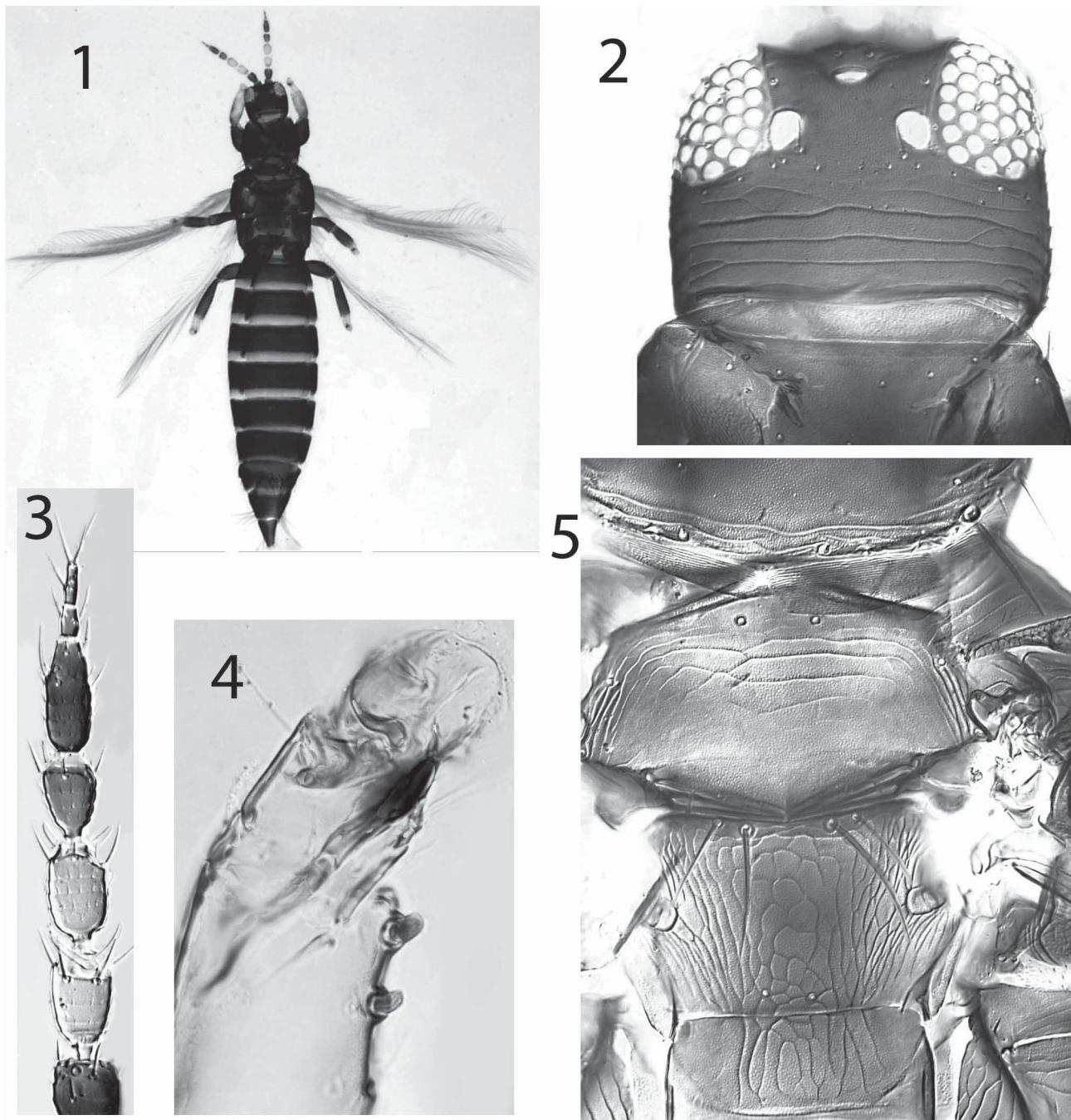
Ctenidia are structures found laterally on the posterior abdominal terga of thrips species in a few genera in the subfamily Thripinae (Mound, 2002). Each ctenidium comprises a discrete and regular row of microtrichia, and each pair of ctenidia has a precise position laterally on the terga that differs between genera. In members of the *Thrips* genus-group the ctenidia on terga VI–VII terminate laterally at tergal seta S3, and on VIII they occur posteromesad of the spiracles. In members of the *Frankliniella* genus-group the ctenidia on terga VI–VII terminate laterally just anterior to tergal seta S3, and on VIII they occur anterolateral to the spiracles (Mound, 2002). However, in the species of *Paraballothrips*, a genus of the *Frankliniella* genus-group from Southeast Asia and Australia (Gillespie et al., 2002), the ctenidia on VIII are anterolateral to the spiracles as in *Frankliniella*, but those on VI–VII terminate laterally in a more anterior position, at the midlateral seta on the tergal margin. The purpose of this paper is to describe a new genus and species of Thripinae, found recently in Sichuan, Southwestern China, with ctenidia essentially similar to those of *Paraballothrips* species, but with a posteromarginal craspedum on terga V–VIII. Tergal craspeda do not occur on any other member of *Frankliniella* genus-group. In contrast, tergal craspeda occur in several genera of *Thrips* genus-group, such as *Microcephalothrips* and *Ernothrips* (see key to genera in Mound & Ng, 2009). The new species described below is also remarkable for the two short, uniquely bulbous, modified setae on the inner margin of the fore tibiae, and for the presence in females of a pair of pore plates on the sixth sternum.

Yaobinethrips gen. n.

Macropterous Thripinae, with paired ctenidia on posterior abdominal terga. Antennae 8-segmented, sensoria on III–IV forked (Fig. 3), segment I without dorso-apical setae. Head with 3 pairs of ocellar setae, pair III posterior to tangent joining posterior margins of hind ocelli (Fig. 2); maxillary palps 3-segmented. Pronotum trapezoidal, two pairs of posteroangular setae. Mesonotum with no sculpture medially, median setae close to posterior margin. Metanotum reticulate medially, median setae at anterior margin, campaniform sensilla present (Fig. 5). Fore wing first vein with setal row almost complete but distal four setae widely spaced (Fig. 9); second vein setal row complete; clavus with five marginal and one discal setae; posterior cilia wavy. Fore femora slightly swollen, inner margin angulate medially, with pointed tubercle near base (Fig. 6); fore tibiae each with two short, broadly rounded,

bulbous modified setae (Fig. 4). Tarsi 2-segmented. Prosternal basantra rugose, with no setae; ferna robust, complete medially (Fig. 6); mesothoracic furca with spinula, metathoracic furca without spinula. Abdominal terga I–II without craspedum, V–VIII with narrow craspedum, median setae and campaniform sensilla wide apart (Fig. 7); VIII with paired ctenidia anterolateral to spiracles, VI–VII with ctenidia terminating at median lateral marginal seta (Fig. 7); sterna with 3 pairs of marginal setae, without discal setae; sternum VI with pair of small circular pore plates (Fig. 8).

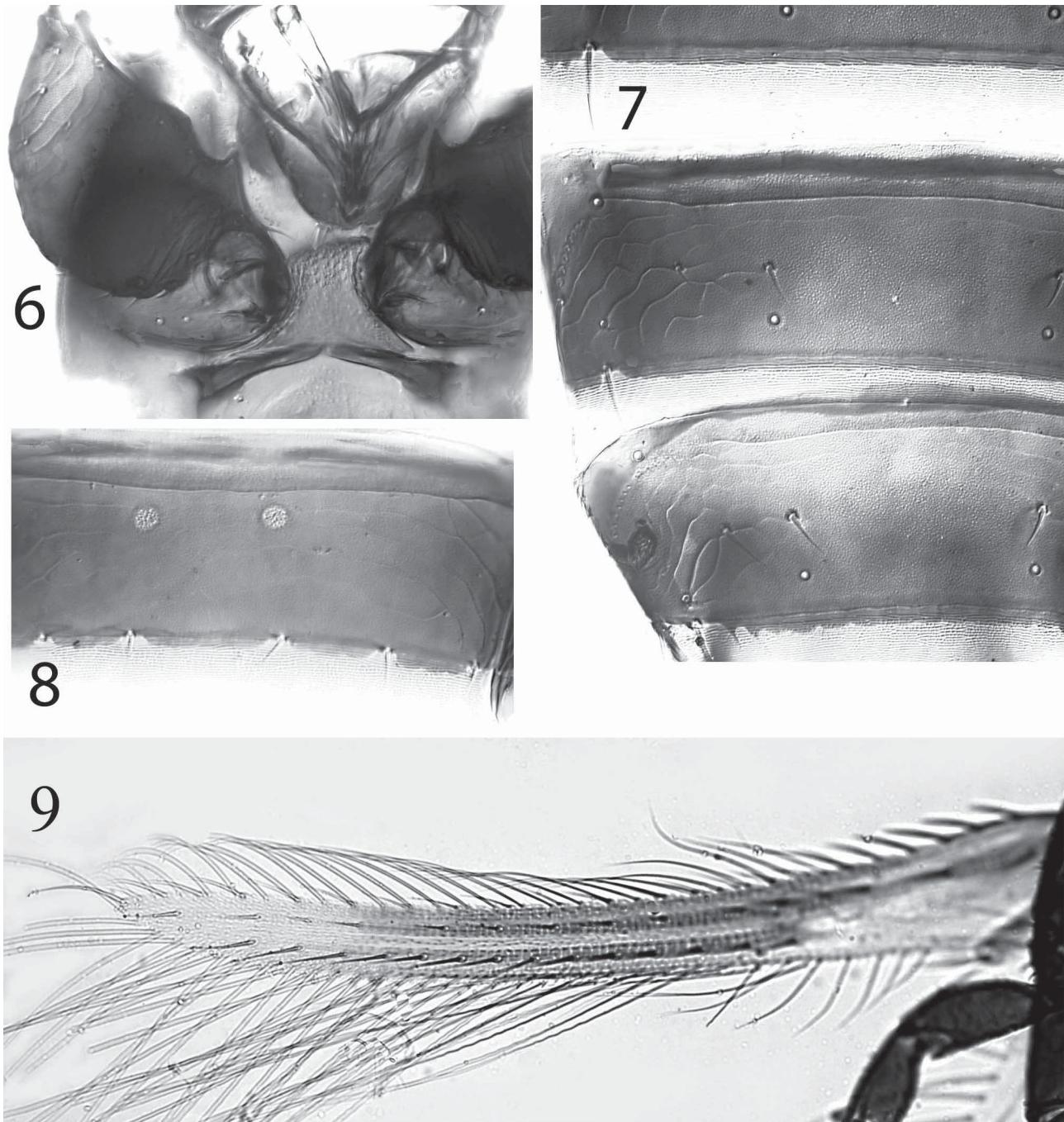
Type species *Yaobinethrips yangtzei* sp. n.



FIGURES 1–5. *Yaobinethrips yangtzei* gen. et sp. n. (1) Female. (2) Head. (3) Antenna. (4) Fore tibia and tarsus. (5) Meso- and metanotum.

Relationships

The presence of paired ctenidia anterolateral to the spiracles on tergum VIII, together with the presence of ocellar setae pair I, the almost complete row of setae on both wing veins, and the metanotal median setae at the anterior margin of this sclerite, all indicate that this new genus is a member of the *Frankliniella* genus-group (Mound, 2002). The position of the ctenidia on terga VI–VII, terminating laterally at the median lateral marginal setae, is shared only with members of *Parabaliothrips*, as discussed by Mound (2002). However, the species described below in this new genus has tergal craspeda, unlike any member of *Parabaliothrips*, the short bulbous setae on the fore tibiae are unique amongst Thripidae, and the presence of sternal pore plates in females is unusual.



FIGURES 6–9. *Yaobinthrips yangtzei* gen. et sp. n. (6) Prosternum and fore femora. (7) Terga VI–VIII. (8) Sternal pore plates. (9) Fore wing.

***Yaobinthrips yangtzei* sp. n.**

(Figs. 1–9)

Female. Body dark brown; all tarsi yellow, also fore tibia except at base; antennal segments III–IV and basal half of V yellow; fore wing including clavus brown, with apex pale, and sub-basal area posterior to vein also pale (Fig. 1). With the character states given in the generic definition above; antennal segments III–IV short and broad, VIII longer than VII (Fig. 3). Head wider than long, sculpture distinctly striate behind eyes; postocular setae minute, pair I just behind ocellar setae III (Fig. 2); apparently six ventral ommatidia weakly pigmented. Pronotum with no sculpture except for three transverse lines near posterior, discal setae minute, three pairs of posteromarginal setae; inner posteroangular setae longer than outer pair. Metanotum reticulate (Fig. 5). Fore wing first vein with distal four setae wider apart than their length (Fig. 9). Abdominal tergum I transversely reticulate, IV–VI with sculpture lines extending to campaniform sensilla and setae S1; VI with setae S1, S2 and S3 all equally small, posteroangular setae arising mesad of the posterior angle (Fig. 7); IX with two pairs of campaniform sensilla; median split on X not complete.

Measurements (holotype female in microns). Body length 1500. Head, length 90; width across eyes 150; ocellular setae III length 15. Pronotum, length 170; maximum width 210; posteroangular setae length, inner 60, outer 50. Metanotal median setae length 55. Fore wing length 840. Abdominal tergum IV median setae length 8; tergum X setae length 110. Antennal segments III–VIII length, 40, 38, 28, 43, 12, 20.

Male. Not known.

Material studied. Holotype female: CHINA, Sichuan Province, Yanbian County, Bailing Mountain (27°07'42"N, 101°29'33"E), from white flowers of *Dalbergia yunnanensis* at 1881m, 9.v.2010 (Zhang Hong-rui), in Yunnan Agricultural University, Kunming.

Paratypes, 15 ♀, collected with holotype; paratypes deposited in Academy of Sciences, Beijing; South China Agricultural University, Guangdong; Australian National Insect Collection, Canberra.

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References

- Gillespie, P.S., Mound, L.A. & Wang, C.L. (2002) Austro-oriental genus *Parabaliothrips* Priesner (Thysanoptera, Thripidae) with a new Australian species forming male aggregations. *Australian Journal of Entomology*, 41, 111–117.
- Mound, L.A. (2002) The *Thrips* and *Frankliniella* genus groups: the phylogenetic significance of ctenidia. Pp. 379–386 in Marullo, R. & Mound, L.A. (eds) *Thrips and Tospoviruses: Proceedings of the 7th International Symposium on Thysanoptera*. Australian National Insect Collection, Canberra. <http://www.ento.csiro.au/thysanoptera/symposium.html>
- Mound, L.A. & Ng, Y.F. (2009) An illustrated key to the genera of Thripinae (Thysanoptera) from South East Asia. *Zootaxa*, 2265, 27–47. <http://www.mapress.com/zootaxa/2009/f/zt02265p047.pdf>